3.10 TENNESSEE RIVER BASIN
UPPER DUCK RIVER

DESCRIPTION and EXTENT OF PROBLEM

According to the 1998 303(d) List, several subwatersheds of the Upper Duck River are either partially or not supporting due to high levels of pathogens, nutrients, and sediment caused by agriculture (pasturelands & animal holding areas), urban runoff, land disposal (failing septic systems), and construction (land development).

1998 303(d) LIST

WATERSHED NAME	SOURCES
Upper Duck River-Cathey's Creek	agriculture
Upper Duck River-Caney Creek	pastureland
Upper Duck River-Fall Creek	agriculture
Upper Duck River-North Fork Creek	agriculture
Upper Duck River-Wartrace Creek	pastureland

SUBWATERSHED ROTATIONAL PLAN

The Upper Duck River subwatersheds are currently not receiving any 319 or EQIP funding. The possibility of addressing additional agricultural problems in the subwatersheds with 319 funding remains strong. As is common in most of the UWA watersheds agricultural BMP activity is more advanced than other nps issues. If it is deemed by TDEC that other sources require remediation, time should demonstrate a growing level of expertise in the other nps issues, thereby allowing these other sources to be addressed with 319 funds in these same subwatersheds.

COOPERATING PARTNERS

Partners	Abbreviations
Duck River Agency	DRA
Keep America Beautiful chapters	KAB
Keep Tennessee Beautiful program	KTB
Local city governments	
Local county governments	
Local county Soil Conservation Districts	SCDs
Local developers & home builders	
Local landowners	
Tennessee Department of Agriculture	
Ag Resources Conservation Program	TDA-ARC
Tennessee Department of Environment & Conservation	
Division of Ground Water Protection	TDEC-GWP
Division of Solid Waste Management	TDEC-SWM
Division of Water Pollution Control	TDEC-WPC
Division of Water Supply	TDEC-DWS
Tennessee Department of Health	
Division of Lab Services	TDH-DLS
Tennessee Valley Authority	TVA
Resource Stewardship Watershed Team Program	

Tennessee Home Builders Association	THBA
Science Applications International Corporation	SAIC
The Nature Conservancy – Tennessee	TNC
U.S. Department of Agriculture	
Natural Resource Conservation Service	USDA-NRCS
U.S. Department of Interior	
Geological Survey	USGS
U.T. Institute of Agriculture	UTIA
U.T. County Technical Assistance Service	UT-CTAS

Duck River Agency

The agency has been the recipient of low altitude infrared imagery mapping completed by TVA and supported through 319 funds. This mapping will serve as an important guide to land usage in the watershed, thereby providing insight as to where and what type BMPs need to be implemented in order to improve local water quality.

The DRA has had close ties with the Duck River Utility Commission, which provides the majority of drinking water from the Normandy Lake. Through both of these entities, public awareness efforts could be launched in an effort to increase local water quality stewardship and public support.

Keep Tennessee Beautiful Program: Keep America Beautiful

Several local chapters of the national Keep America Beautiful program are active in the Duck River watershed. These chapters have the opportunity of participating in a 319-funded illegal dumpsite cleanup program, managed by the Keep Tennessee Beautiful Program. This project will inventory all of the illegal dumpsites in a five county area and facilitate the remediation of at least one site in each of these counties.

This type of success will be dependent upon strong local citizens support. These chapters would be excellent partners for future watershed efforts because of their strong environmental stewardship and their abilities to promote local support through public awareness campaigns.

Local Governments

As Coffee and Bedford Counties' residential and commercial growth continues to take farmland of the Upper Duck River watershed, its officials and residents will need to remain aware of and protect the existing Ag-related remediation work already in place. More importantly, government officials need to assume a leadership role in the nonpoint source effort by establishing water quality control measures for all construction sites and stormwater problem areas as growth continues.

City officials will be encouraged to work with local landowners and contractors to at least investigate the possibilities of installing BMPs to reduce construction and urban-related runoff. Even though initial BMPs implemented in the watershed will be of an agricultural nature, the city officials, landowners, and contractors will be provided an opportunity to learn how these BMPs can be converted to more urbanized usage.

Local County Soil Conservation Districts

The SCDs are partners in the effort to reduce nonpoint source pollution to the local waters. They can provide a significant amount of financial assistance to local water quality efforts. Through their direct interaction with the local NRCS district conservationist, the SCDs can also direct technical as well as administrative assistance to local water quality projects. The SCDs also serve as leaders in the effort to increase water quality education of the local citizens and operators.

Local developers & home builders

The local watersheds are rapidly growing with many rural areas becoming sub-urbanized. Agricultural-related problems are giving way to construction and urban runoff problems, an issue, which can be minimized if developers, contractors, and home builders make the effort to eliminate sediment loadings and high stormwater discharges.

Local landowners

Landowners will be requested to participate in the implementation of BMPs by allowing the BMP to be placed on their property, contributing to the construction of the BMP through in-kind services, and maintaining the BMP for a pre-determined or indefinite period of time. These same landowners will also be required to allow others to visit the BMP once it has been fully constructed.

TDEC-Division of Solid Waste Management

The Division of Solid Waste Management (SWM) can work with the Keep America Beautiful chapters and the Keep Tennessee Beautiful program by providing them with amnesty for lands containing existing illegal dumpsites. This will allow the landowners to give chapter members access to the existing illegal dumpsites without the fear of being cited by TDEC-SWM or TDEC-WPC. SWM would also have the opportunity of exchanging information with the chapters regarding water quality prioritization and techniques for collecting and disposing of solid waste collected at illegal dumpsites.

Science Applications International Corporation

Science Applications International Corporation (SAIC) is currently involved in both surface and ground water quality issues at the Arnold (Air Force) Engineering Development Center (AEDC), located in the upper reaches of the Upper Duck River watershed. Staff could provide stormwater management and soil erosion assistance to local entities during a future Upper Duck River watershed project.

The Nature Conservancy – Tennessee

The Nature Conservancy (TNC) is known worldwide for its ability to purchase lands in an effort to protect natural resources including water quality. TNC staff is currently positioned in the Duck River watershed to carry out such projects and will serve as an excellent partner. TNCs ability to purchase lands could be well served along riparian zones of the Upper Duck River and its tributaries in an effort to improve the water quality and local ecology.

CURRENT 319 PROJECTS

FY-96 Normandy Lake Improvement Through Watershedwide Mgmt. DRA/TVA

CURRENT MONITORING & ASSESSMENT

TDEC-WPC five-year watershed management approach
TDH-DLS pre- and post- BMP monitoring

MEASURES OF SUCCESS

- UWA projects have been implemented in all 303(d) listed subwatersheds with a large portion of the required pollutant source sites having been addressed.
- Base projects have been implemented in all 303(d) listed subwatersheds, which require the introduction of un-addressed nps categories (i.e. failing septic systems, construction, and urban runoff) through demonstration projects.
- Post BMP implementation monitoring results are indicating an overall improvement of the water quality of the streams directly affected by BMP implementation.
- The subwatersheds once 303(d) listed have been removed due to sufficient water quality improvements.
- BMP implementation has improved the water quality to the point that the health and quantities of natural resources, including endangered habitat and aquatic life, have significantly improved.

MILESTONES

Long Term Goal 1.

Hold regularly scheduled meetings with stakeholders, to create new partnerships, strengthen existing partnerships and to foster greater trust, commitment and accountability.

- **Action**: Conduct an annual priority watershed partners meeting for project coordination.
  Lead: TDA-NPS Program
  Key Partners: TDEC-WPC; USDA-NRCS; TDH-DLS; TVA; local governments;SCDs; TNC
  Year(s): 2001-2005

- **Action**: Select the intial subwatershed for restoration.
  Lead: TDA-NPS Program
  Key Partners: TDEC-WPC; USDA-NRCS; TDH-DLS; TVA; local governments;SCDs; TNC
  Year(s): 2001

- **Action**: Develop a Watershed Restoration Action Strategy.
  Lead: TDA-NPS Program
  Key Partners: TDEC-WPC; USDA-NRCS; TDEC-DWS-GWMS
  Year(s): 2001

Long Term Goal 3.

Restore all waters impaired by nonpoint sources that are listed on the 1998 303(d) List to the condition of fully supporting their designated uses by 2015, in cooperation with local, state and federal partners.

Action: All needed BMPs will be installed in the selected subwatershed.
Lead: SCDs; TVA; TNC;USDA-NRCS
Key Partner: TDA-NPS Program
Year(s): 2005

Action: Forty percent of the needed BMPs in the Upper Duck watershed will be implemented.
Lead: SCDs; TVA; TNC;USDA-NRCS
Key Partner: TDA-NPS Program
Year(s): 2010

- **Action**: Water quality of the selected subwatershed will indicate improvement due to the BMP implementation efforts.
  Lead: TDEC-WPC and TDH-DLS
  Key Partners: TVA; USDA-NRCS; SCDs
  Year(s): 2005

Long Term Goal 5.

Improve the knowledge of stakeholders and citizens concerning the origins, magnitude, and prevention of nonpoint source pollution.

- **Action**: Develop at least two educational projects to educate the local citizens, landowners, and elected officials in the Upper Duck River Watershed
  Lead: TDA-NPS Program
  Key Partner: SCDs; USDA-NRCS; TNC; TVA
  Year(s): 2005

Long Term Goal 7.

Use the maximum allowable percentage of funding annually to assist partners with water quality monitoring and assessment, for the duration of the 319 program.

- **Action**: Pre-BMP implementation monitoring will have been completed and post-BMP implementation monitoring will be in progress in the selected subwatersheds of the Upper Duck watershed
  Lead: TDEC-WPC and TDH-DLS
  Key Partners: TDA-NPS Program, USDA-NRCS; SCDs; TVA
  Year(s): 2005

- **Action**: Post-BMP implementation monitoring will have been completed in two subwatersheds of the Upper Duck watershed.
  Lead: TDEC-WPC and TDH-DLS
  Key Partners: TDA-NPS Program, USDA-NRCS
  Year(s): 2010